

# Calling All Appraisers Valuing Cell Sites

By Sean Heath

**A** homeowner, concerned about a new wireless site going in next to her condominium, stood up to speak at a recent city council meeting.

"I realize that it takes a lot of antennas to make a wireless world work but does it have to go through my bedroom?"

Our wireless world has grown exponentially since its infancy in the early 1980s. Back then, cell phones were a bulky, briefcase-sized novelty lugged around by a relatively small number of subscribers. According to the latest estimates, there are approximately 120 million subscribers in this country alone—or in other words, almost half of our country's population.

Supported by the Telecommunications Act of 1996, which deregulated the telecommunications industry, more wireless carriers are expanding their coverage networks—all in response to rising consumer demand. Subscribers want their cell phones to work everywhere and want better service—not just along the freeway but in front of their house, at the store, and at the neighborhood park.

However, community planning groups have become quite vocal over the past two years against the construction of telecommunications antennas in or near their subdivisions. Are homeowner complaints translating into lower home sales prices? If so, can this be measured? This is a role that can be filled by a knowledgeable appraiser, using the same technique used to measure other forms of external obsolescence.

External obsolescence is defined as a defect caused by negative influences out-

side a site and generally incurable on the part of the owner, tenant or landlord. These influences could be one of four types (see table next page).

Based on these categories, proximity to a cell site would be a physical form of external obsolescence. One accepted method used to measure a loss in value due to a physical externality is through sales comparison. For example, if traffic noise were to be measured, then a sale of a home next to a freeway would be compared with an identical home that sold at the same time but in a quieter portion of the tract. Therefore, to measure the loss in value resulting from proximity to a cell site, a home sale close to the antennas would need to be compared with one that is further away.

In theory, according to the concept of substitution, the amount a typical buyer would pay for a home would not be any more than the price of a comparable property. This seems reasonable since it emulates the process most consumers go through, at least in their minds, before purchasing a home. For example, if buyers perceive that a home next to a cell site is less appealing than a similar home further away, they might negotiate a lower purchase price.

This has been the basis for a number of complaints made by homeowners against new cell sites in their backyards. However, most of the objections that we have heard were unsupported or if support was presented, it was not germane to a discussion of cellular-telecommunications sites.

A frequently-cited example relates to a Sprint application to build a cell tower in New Jersey in August of 2000 and is often referred to as the "Vernon Township" case. Objecting to Sprint's application



13 years. For the last five years, he and his father, Thomas D. Heath, MAI, have specialized in telecommunications assignments from San Diego to Sacramento, Calif., for municipalities, tower operators and private-property owners. Mr. Heath can be contacted at (858) 673-1177 or by e-mail at [heath\\_group@hotmail.com](mailto:heath_group@hotmail.com).

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|-----------------|--|
| 1. Social       | A changing neighborhood.   |
| 2. Governmental | A change in zoning.  |
| 3. Physical     | Proximity to an airport, highway, landfill, or mining operation.                                   |
| 4. Economic     | A change in interest rates, a shift in an area's employment base or a change in the local economy. |

on the basis of property values, residents living next to the proposed site hired an appraiser to study the issue. This appraiser used a paired-sales analysis method to determine the effect on value from high-tension power lines. After finding three home sales which were next to high-tension lines, the appraiser then found that these homes sold for less than similar homes further away. The appraiser then jumped to the conclusion that, since power lines caused a declination in value, it would be reasonable to assume that cell towers would have the same effect.

Before the Vernon Township Zoning Board, this appraiser then stated that he could find no concrete information relating to cell towers. When pressed for details by the Zoning Board, the appraiser stated that he had done an exhaustive search for sales of homes next to cell towers but could not find any.

In another instance, we were asked to review a short letter written by a local appraiser for a proposed site in the northern portion of San Diego County. In his letter, this appraiser states that "the construction and operation of the proposed

wireless communication facility will diminish the value of adjoining properties by ten to twenty-five percent." However, no support was given to back up this percentage whatsoever. Instead, the appraiser relied almost entirely on his opinion that "potential buyers are aware of the issues and perceive a problem, thereby impacting the marketability and lowering the values of the properties impacted."

This statement, made without support, is a violation of USPAP, specifically the following section of the Conduct Clause:

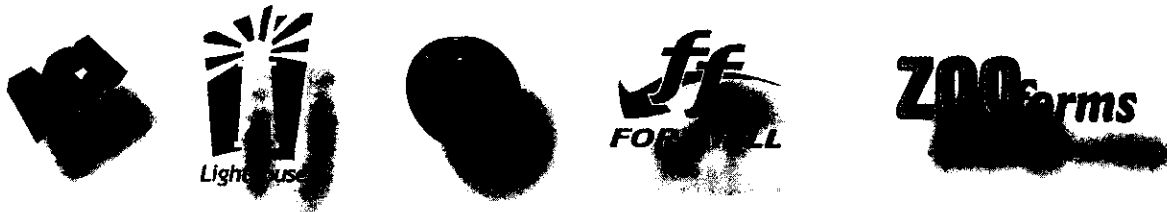
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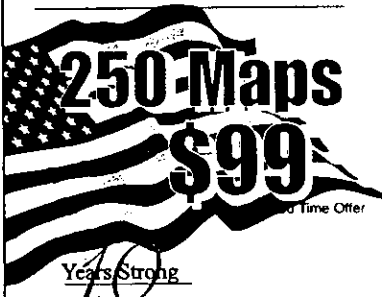
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The concerns of homeowners like the woman in the beginning of the article are real and need to be addressed using substantive data. Some companies, like Sprint, are taking an active role in addressing these concerns by holding informal community meetings, where questions concerning alternate site designs can be discussed.

Under the Telecommunications Act of 1996, recent court decisions have upheld that local municipalities have a narrow degree of authority over the regulation of wireless facilities. Specifically, cities can only consider design aesthetics in their decision to approve a site application, among other limited options. They cannot, for example, preclude a vendor from providing cellular service for a given area or consider health and safety related issues.

In a public release published on the Internet, Dr. John Moulder (Professor of Radiation Oncology of the Medical College of Wisconsin) addressed some of the health and safety concerns raised by community groups relating to the risk of radiation from telecommunications sites.

*"The consensus of the scientific community, both in the US and internationally, is that the power from these base station antennas is far*

*too low to produce health hazards as long as people are kept away from direct access to the antennas. It is critical to be aware of the difference between antennas, the objects that produce radio-frequency radiation, and towers or masts, the structures that the antennas are placed on. It is the antennas that people need to keep their distance from, not the towers that hold the antennas."*

There will continue to be a balancing act between the needs of cellular vendors to service their customers and the concerns of homeowners. As a society, we enjoy the benefits of wireless communication and the convenience of being free from land lines. In this age of instant messaging and e-mails, we have grown accustomed to the fact that we can reach anyone, anywhere, at any time. We just don't want to see the antennas that help us place the call.

Although cell sites have gotten smaller and can be concealed better, wireless networks have not yet gotten to the point of being truly invisible.

Perhaps the price we have had to pay to be free from traditional phone lines is that we are now tied to a network of antennas and repeaters strung across our neighborhoods.

Maybe Swiss author and architect Max Frisch was right in 1957 when he wrote the following observation, "Technology... is the knack of so arranging the world that we don't have to experience it."

Or perhaps see it in our backyard.

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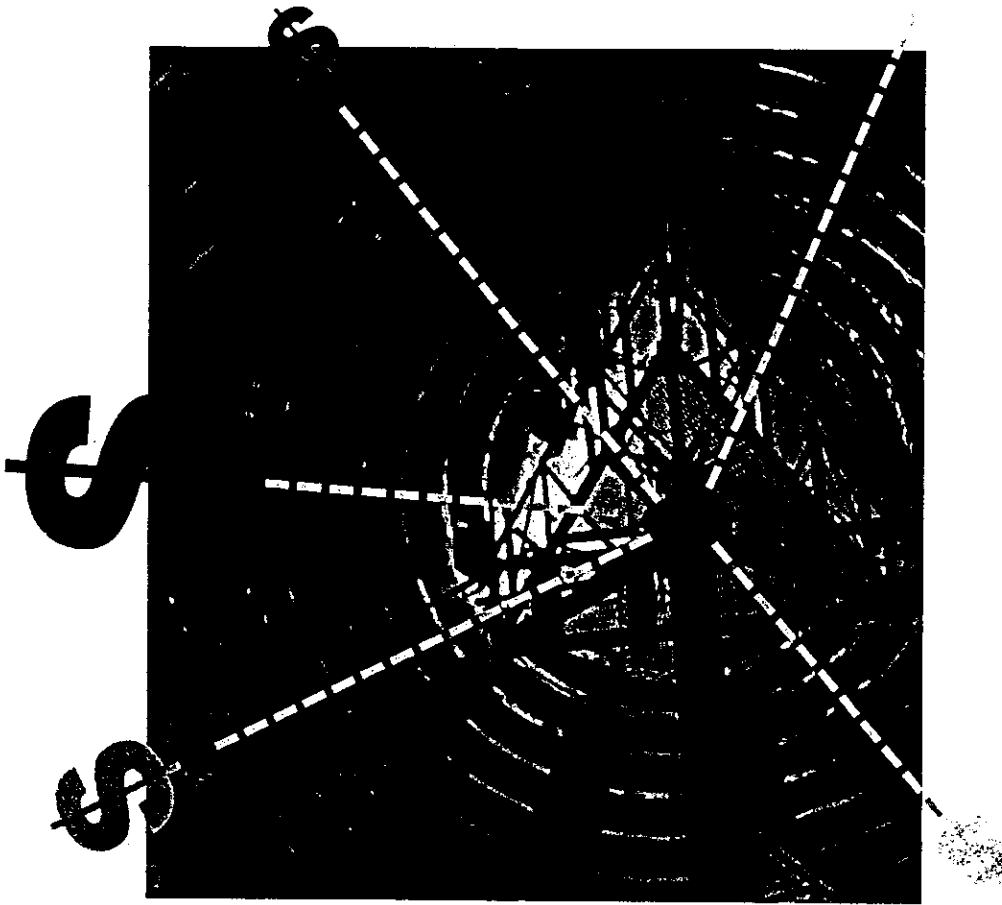
"If you want to change the world, go home and love your family."

—Mother Teresa

# There's Gold in Them Thar Antennas!



By Sean Heath



million personal computers. Every year since 1996, more people subscribe to cellular telephone service than to fixed ones, and that gap is widening. By 2004, it is likely that one person in six on the planet will have a mobile telephone, she predicts.

This revolution is transforming the utility and inherent value of real estate that has the potential to serve as a telecommunication site. Mountaintops, formerly considered to be useless, can now command premium values, as the city manager noted in this story found out.

## Recognizing an Antenna Site

Antenna sites can be organized into three categories based on the type of support structure on which the antenna is mounted: lattice towers, single masts or monopoles and building-attached. Lattice towers range from 60 to 200 feet in height and come with an inherent trade-off. Although they can accommodate many users at the same time (one analyst coined the term *telecom hotel* to describe the largest sites), they often come with serious visual impacts. Generally, leases at these sites are coordinated and managed by a tower operator, who in turn pays a certain amount of the rent to the underlying property owner for the right to occupy the mountaintop.

Monopoles tend to range in height from 25 to 125 feet and consist of a single mast, approximately three feet in diameter at the base, narrowing to roughly one and a half feet at the top and may support any combination of whip, panel or dish antennas. They are generally used in rural areas, near freeways or in areas where buildings are not of sufficient height to meet line-of-sight transmission requirements. In the cellular/mobile phone system, monopoles are used much more often than lattice towers. The latest trend in monopole development is to camouflage poles and antennas. This is particularly important

It sounded like a good idea at the time. At least it did to one particular city manager in southern California, when a telecommunications-tower operator offered to pay his city approximately \$500 a year in rent for the right to construct a 100 foot telecommunications tower on one of the city's mountaintops. Although he had virtually no data or background knowledge of telecommunications leases, the city manager figured that since the peak was undeveloped and had no other practical purpose, such a lease would amount to a windfall of sorts for the city.

Several years later, however, this manager learned that the contract rent he had agreed to was almost three times less than what other operators were paying in the marketplace. To make matters worse, certain clauses in the original contract prevented him from negotiating a higher rent.

In situations like these, the appraiser's role, as a reflection of market rents and leasing trends, could not be more clearly defined.

*There's gold in them thar antennas!*, a play on the battle cry of miners hungry for gold during California's Gold Rush, is being heard today more and more from both public and private-property owners. In those days the conquest of land was the ultimate goal. In the 21<sup>st</sup> century, it is the conquest of the airwaves or bandwidth that is the real gold, as more and more telecommunications carriers compete for our wireless ears.

In her novel *The Death of Distance*, Francis Cairncross states that mobile-phone use has grown at a pace even faster than computer-chip technology. According to Cairncross, in 1990 there were just over 11 million mobile telephones worldwide. In 2000, there were 650 million, compared with 500

is an area where residents are sensitive to the visual appearance of poles or towers. One particular manufacturer, Lynot cell (<http://www.lynocell.com>), designs monopoles to look like palm or pine trees to better blend in with the surrounding environment. Another company offers designs that look like, and double as, flagpoles or light standards.

These sites are typically accompanied by equipment buildings or boxes, which can vary in size depending on the type of use. PCS equipment facilities, called base stations, are self-contained in weatherproof cabinets about the size of a vending machine. Therefore, a typical monopole site lease will specify enough ground area to accommodate both the mast and the equipment cabinet or building. As a point of comparison, an average monopole site along a freeway or similar major arterial will typically take up about 300 to 500 square feet of ground, whereas a paging site serving a small portion of a densely-populated city

block may require less than 500 square feet of area.

Building-attached facilities come in two general forms: 1. Roof-mounted, in which antennas are placed on the roofs of buildings or 2. Side-mounted, in which antennas are hung over the sides of buildings. Although not as common, antennas also can be mounted on other structures such as water tanks, billboards, church steeples or other creative locations.

Although the visibility of building-attached facilities varies, roof-mounted antennas are generally hidden from view because they are located in the middle of the roof or in boxed structures resembling air conditioning units. Likewise, side-mounted antennas are also unnoticeable if they are painted to match the color and texture of the building.

It is important to note that although building-attached facilities are becoming common, they can be used only when buildings meet the height required for antennas to function within the

surrounding system. When buildings do not meet height requirements, providers tend to use monopoles.

### We Want the Airwaves

Until recently, the prevailing regulatory opinion (at least on the federal level) was that the use of bandwidth for communications is a public right. Therefore, no single entity could claim ownership of this right, since it would be tantamount to owning air. However, with the breakup of AT&T in 1982 and the Federal Telecommunications Act signed by President Clinton in 1996, this concept has been turned upside down.

In an attempt to deregulate the telecommunications industry, the 1996 Act requires that segments of the radio spectrum (blocks of frequencies) be sold on a public-auction basis. By purchasing blocks of bandwidth, commercial wireless carriers (such as Verizon and Nextel) now have a right of ownership, referred to as a *wireless*

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estate. Theoretically, the value of an ownership right in a free market is based on the concept of substitution; what a willing buyer would pay for a similar site or what a willing tenant would pay in rent. By its very nature, the concept of substitution assumes an open exchange of market data, which does not yet exist in the telecommunication site marketplace. Sales of these sites, when they do take place, are often one-sided and are generally not made public or at least not to the same degree as other property types.

### Where to Find the Data

Since the majority of these sites tend to be leased rather than sold (particularly government-owned properties), the best means of estimating value is the *income approach*. Site leases are more prevalent, although it takes a little investigative work on the part of the appraiser to uncover the data. A good place to start is at the city or county level, through the following departments or agencies.

- City Clerk's office: this is always the best place to start and may end up being your best resource in terms of securing copies of telecommunication-site leases
- Parks and Recreation: for antennas on ball fields or other parklands
- Police and Fire Departments

- City Manager's office
- School districts
- Water districts

A typical site lease is usually a triple-net lease, with all of the expenses associated with the operation of the antennas passed through to the tenant (including taxes and utility charges). A common term is for a base period of five to 10 years, with up to three option periods of five years each. In most leases, rent escalators are factored in, based either on a fixed percentage or the local Consumer Price Index. In addition, the following clauses or components are also typically found in most site leases.

#### 1. Administrative-review clause:

This allows the Lessor to review the terms of the contract and to renegotiate at market rates upon renewal of the lease or prior to the execution of any lease option. Also, if the tenant substantially alters the improvements for which they are paying rent, this also triggers an administrative-review.

#### 2. Right of reversion:

This type of clause allows the ownership of the telecommunications improvements to revert to the Lessor upon expiration of the lease.

#### 3. Non-exclusivity:

We have seen certain situations in which commercial carriers ask to be the master tenant for a particular

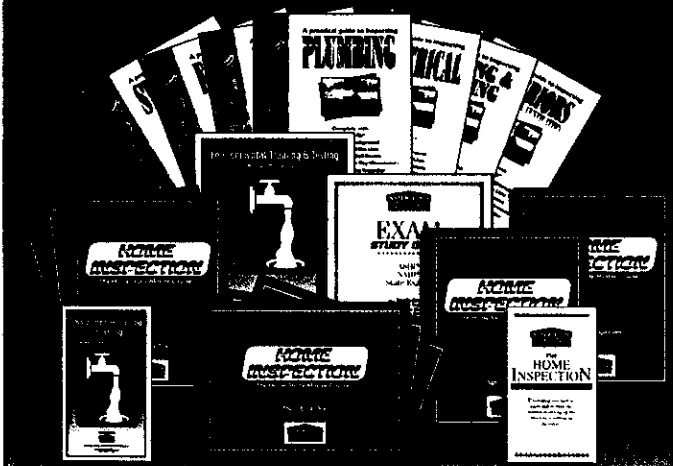
telecommunication site, thereby giving them the exclusive right to develop and sublease the site. This is fairly common with larger sites (mountaintops or water tanks, for example) where tower operators are often contracted by property owners to handle day-to-day management.

Our recommendation to clients is that if owners allow a single carrier or operator to act as a master tenant on any site with sublease potential, the owner ought to ask for a percentage of any sublease income collected by the master tenant, on top of whatever base rent the master tenant is paying the owner.

We recently appraised a site next to a military base that was to be used by a commercial carrier. The site was located along a busy intersection and was to be improved with a 95-foot monopole and a 336-square-foot equipment building. The improvements seemed reasonable for a single tenant, until we looked at the amount of land that the commercial carrier was asking for, which was 900 square feet. This is more than enough room for the carrier to construct another pole and building and sublease it out to another carrier. The property owner took this into consideration during the negotiation of a rental rate and ultimately the commercial carrier agreed to pay the owner a percentage of any potential sublease income.

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#### 4. Payment of electricity:

The cost of electricity, depending on the area, may be paid by the property owner or lessor, or may also be passed along to the tenant depending on how a lease is written. Of the tower operators and telecommunication-site owners we interviewed, the prevailing practice has been to either submeter all tenants or charge those tenants with heavy power requirements (1,000 watts or more) a flat surcharge of \$1 per watt per month. Here in California, where deregulation of the utility industry has caused utility bills to nearly triple, some lessors are beginning to consider imposing this surcharge on *all* their telecommunications tenants, regardless of power use.

In a general sense, the following factors should be taken into consideration

during any evaluation of a telecommunication-site lease. Although this is not meant to be a comprehensive list and should be confirmed by a qualified radio-frequency engineer, it nevertheless highlights the types of influences that are taken into consideration in negotiating leases.

1. Existing lease terms (are there clauses that might prevent re-negotiation of a rental rate approximating prevailing market terms?)
2. The amount of space taken up by a particular tenant (including both existing and future-expansion). In other words, is a tenant occupying space that could otherwise be leased to another carrier? Along the same lines, does a tenant have the right to sublease any or all of their cabinet space, thereby creating an additional source of income for the tower operator or Lessor;
3. Frequency-bandwidth interference. Will the tenant's improvements interfere with the a Lessor's right or the right of other tenants to operate their antennas or dishes at the site?
4. Power requirements
5. Additional Antennas or Dishes
6. Changes in technology

#### Estimating Market Value

Once the appraiser collects site-leasing data, the next step is to estimate the market value of the site, based on its income stream. Larger, multi-tenant sites should be evaluated using a yield-capitalization technique, in a manner similar to an

evaluation of a multi-tenant office building. For smaller, single-tenant sites, a direct-capitalization technique can be used. In this situation, the net operating income is equivalent to the gross potential income, less a facility-management fee for overhead and supervision. In our area, cities and tower operators charge approximately 15-30 percent of gross income, although in other areas, we have seen this fee drop down to as low as five or six percent.

Ideally, capitalization rates could be extracted from the market, just like for other income-producing properties like apartments, office or retail buildings. However, as we mentioned, the market for telecommunications sites is still fairly closed. Telecommunications sites do sell, although infrequently. Therefore, an appraiser should use a band-of-investment technique to arrive at a reasonable capitalization rate.

You can find a list of Internet resources online at [www.frea.com](http://www.frea.com) in the story: *There's Gold in Them Thar Antennas!* ▲



Sean Heath is a Certified Residential appraiser based in San Diego and has been appraising 13 years. For the last five years he and his father, Thomas D. Heath, MAI, have specialized in telecommunications assignments for various local municipalities, tower operators and private-property owners. Mr. Heath is also a freelance writer and has contributed previously to The Communicator. He can be contacted at (858) 673-1177 or [hg-sean@pacbell.net](mailto:hg-sean@pacbell.net).

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